

Contributors to This Issue

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C. J. CALBICK, B.Sc. in E.E., State College of Washington, 1925; M.A. in Physics, Columbia, 1928. Bell Telephone Laboratories, 1925-. Here he has been engaged in the study of thin films on thermionic cathodes, electron diffraction problems, electron optics and microscopy, and in the development of high quality cathode-ray tubes for television reception. Member of American Physical Society, American Crystallographic Association, the Electron Microscope Society of America, the New York Microscopical Society and the I.R.E.

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FRANK GRAY, B.S., Purdue, 1911; M.A., Wisconsin University, 1913; Ph.D., 1916. U. S. Navy, 1917-19; Bell Telephone Laboratories, 1919-. His work has been chiefly research in microphone and relay contacts, gas discharge tubes, television, electron beam tubes, microwave tubes, PCM systems, and transistors. Fellow of American Physical Society and the A.A.A.S.; member of Gamma Alpha and Sigma XI; and Associate, I.R.E.

R. D. HEIDENREICH, B.S., Case School of Applied Science, 1938; M.S., 1940. Dow Chemical Company, 1940-45; Bell Telephone Laboratories, 1945-. Here he has worked chiefly on problems of surface metallurgy. Fellow of American Physical Society; member of A.A.A.S., the Electron Microscope Society of America and Sigma Xi.

A. N. HOLDEN, B.S., Harvard, 1925. Bell Telephone Laboratories, 1925-. In the Research Department his work has been chiefly in chemistry and solid state physics, primarily in originating new piezoelectric materials and in perfecting methods of growing crystals.

A. G. JENSEN, E.E., Royal Technical College, Copenhagen, 1920; instructor, 1921. Bell Telephone Laboratories, 1922-. He has been occupied chiefly in radio receiving studies, short-wave transatlantic telephony, coaxial cable development and television research. Fellow of I.R.E. and member of Society of Motion Picture and Television Engineers.

M. J. KELLY, B.S., Missouri School of Mines and Metallurgy, 1914; M.S., University of Kentucky, 1915; Ph.D., University of Chicago, 1918. Joining Bell Telephone Laboratories in 1918, Dr. Kelly became Director of Vacuum Tube Development in 1928; Director of Research, 1936; Executive Vice President, 1944; President, 1951. For the past year he has also served in an advisory capacity to the Air Force to assist in organizing its research and development. He holds honorary doctors' degrees from the University of Kentucky and the University of Missouri. In 1944 Dr. Kelly was awarded a Presidential Certificate of Merit and in 1945 was elected to the National Academy of Sciences. Member of Franklin Institute; Fellow of American Physical Society, I.R.E., Acoustical Society of America, A.I.E.E., and the American Association for the Advancement of Science.

L. A. MACCOLL, A.B., University of Colorado, 1919; M.A., Columbia, 1925; Ph.D., 1934. Bell Telephone Laboratories, 1919-. He has been concerned chiefly with mathematical research and consultation. Visiting lecturer, Princeton, 1948-49; author of "Fundamental Theory of Servomecha-

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W. P. MASON, B.S. in E.E., University of Kansas, 1921; M.A., Ph.D., Columbia, 1928. Bell Telephone Laboratories, 1921-. Dr. Mason has been engaged principally in investigating the properties and applications of piezoelectric crystals and in the study of ultrasonics.

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ELIZABETH A. WOOD (Mrs. Ira E.), A.B., Barnard, 1933; M.A., Bryn Mawr, 1934; Ph.D., Bryn Mawr, 1939. Research Assistant, Columbia, 1941. The next year she was awarded a National Research Fellowship and spent two years studying quartz deposits in the United States. Bell Telephone Laboratories, 1943-. Her work has been chiefly in X-ray diffraction, and the X-ray and optical investigation of crystals. Delegate to the Second International Congress of Crystallography in Stockholm in 1951. Member of American Physical Society, American Crystallographic Association, the New York Mineralogical Club, Phi Beta Kappa, Sigma Xi; and a Fellow of the Mineralogical Society of America.